

1/5/17 "A mistake is food for a new invention." -Anonymous

HW: "Domain and Range" w/s Homework side  
Test 3 on Tuesday 1/17

AIM: What are the domain and range of functions?

Warm Up:

The roots of the equation  $ax^2 + 4x = -2$  are real, rational, and equal when  $a$  has a value of

- (1) 1  
(2) 2

- (3) 3  
(4) 4

Description = Discriminant

real, rational, and equal

$$ax^2 + 4x + 2 = 0$$

$$b^2 - 4ac = 0$$

$$4^2 - 4(a)(2) = 0$$

$$16 - 8a = 0$$

$$\frac{-8a}{-8} = \frac{-16}{-8}$$

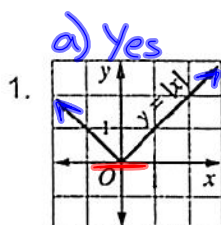
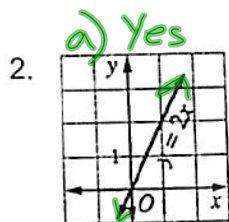
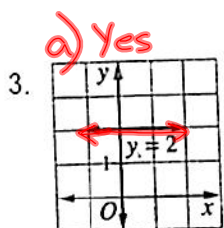
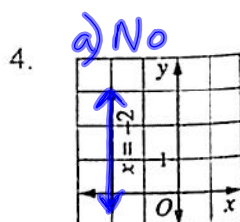
$$a = 2$$

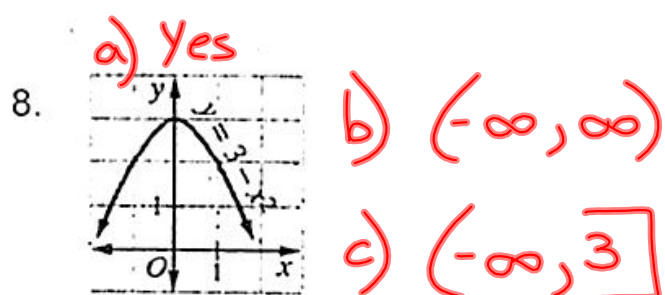
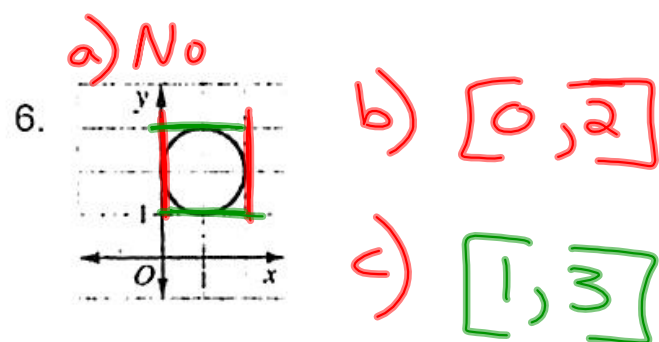
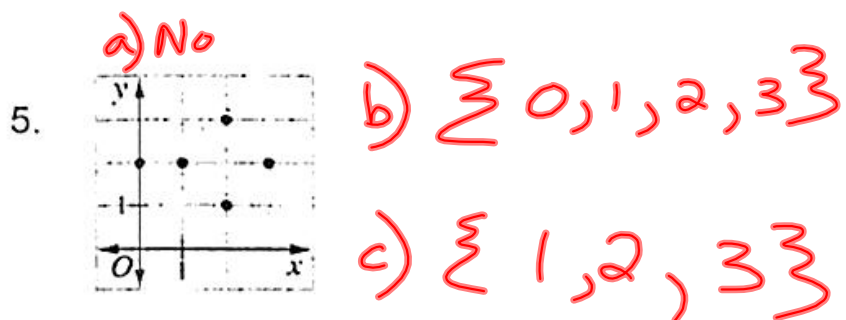
Domain of a function:All possible inputs  
(x-values)FUNCTIONS  
1/5/17Range of a function:All possible outputs  
(y-values)

For numbers 1-12: (a) Determine whether or not each graph represents a function.

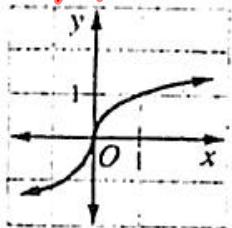
(b) State the domain. (left to right) (Does it pass the VLT)

(c) State the range. (bottom to top)

b)  $(-\infty, \infty)$   $\{x | x \in \mathbb{R}\}$ c)  $[0, \infty)$ b)  $(-\infty, \infty)$ c)  $(-\infty, \infty)$ b)  $(-\infty, \infty)$ c)  $[2]$   $y=2$ b)  $[-2]$ c)  $(-\infty, \infty)$



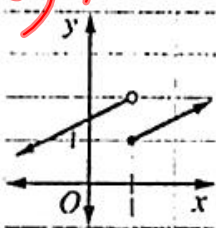
9. a) yes

b)  $(-\infty, \infty)$ c)  $(-\infty, \infty)$ 

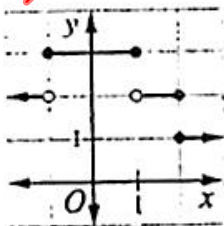
10. a) No

b)  $[0, 4]$ c)  $[1, 3]$ 

11. a) yes

b)  $(-\infty, \infty)$ c)  $(-\infty, \infty)$ 

12. a) No

b)  $(-\infty, \infty)$ c)  $\{1, 2, 3\}$

